Damage Assessment Of Lipid In Brain Of Rats After Chronic Administration Of Oxytocin

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INTRODUCTION: Oxytocin is a hormone produced in the hypothalamus that promotes uterine muscle contractions during labor and milk ejection in the lactation. One of these actions may be antipsychotics. Recent studies suggested that oxytocin may have an antipsychotic effect after three weeks of treatment in patients with schizophrenia. However, there has been no evaluation regarding oxytocin safety during chronic administration. The aim of this study was to evaluate damage in brain of adult rats chronic oxytocin administration. MATERIAL AND METHODS: Sixty-day-old male Wistar rats, randomly assigned to one of the four treatments lasting 21 or 56 days: (A) distilled water, (B) 0.1 mg/Kg oxytocin, (C) 1.0 mg/kg oxytocin, (D) oxytocin 10.0 mg/kg, with a single daily intraperitoneal injection. Prefrontal cortex, nucleus accumbens and striatum were dissected 24h after the last injection and lipid damage was assessed using thiobarbituric acid reactive substances assay. RESULTS AND DISCUSSION: Lipid peroxidation was significantly increased in the prefrontal cortex (0.1, 1.0 and 10.0 mg/kg) and nucleus accumbens (1.0 and 10.0 mg/kg) after 21 days. CONCLUSIONS: The data suggest that prolonged treatment with oxytocin can cause damage to lipids demonstrating the need for future studies examining more deeply the safety of chronic oxytocin regimens.

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